



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

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SEP 19 2001#4
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Appl. Ser. No.:	Filed:	Inventor(s):	Atty Dkt:
09/576,597	22 May 2000	J.J. Voorhees	1718-009A
Title: Compositions and Methods for Use Against Acne-Induced Inflammation and Dermal Matrix-Degrading Enzymes			
Examiner: V. Kim			Art Unit: 1614

Asst. Comm'r for Patents
Washington, D.C. 20231-0001

Not Convincing

DECLARATION UNDER RULE 1.132 BY DR. SEWON KANG

Dear Sir:

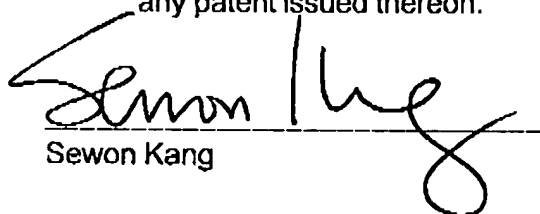
1. My name is Sewon Kang. I am a named co-inventor of this patent application. Presently, I hold the position of Associate Professor and Director of Clinical Research Unit, Department of Dermatology, at the University of Michigan. I earned my M.D. from the University of Michigan Medical School in 1987. After a year of internal medicine internship, I completed a four year combined clinical research fellowship and dermatology residency at Harvard Medical School affiliated Massachusetts General Hospital in Boston. I have worked as a consultant in the pharmaceutical industry, and have been active in clinical and research field of dermatology for almost ten years. A copy of my curriculum vitae is attached.
2. I have read and understood the Office Action mailed 10 May 2001, as well as the present patent application, and the references cited against the application.

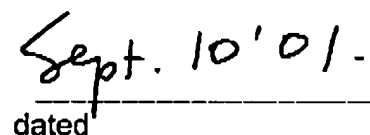
3. The patents to Ramamurthy et al. and Teronen et al. were used in the Office Action as examples of using MMP inhibitors for the treatment of acne. In my opinion, a typical dermatologist would find the suggestions made in these patents to be unbelievable.
4. Ramamurthy describes treating various unrelated conditions with a combination of bisphosphonate and tetracycline. While I am not skilled in all areas of medicine, I am skilled in the field of dermatology. Of the dermatological conditions mentioned by Ramamurthy, burns, wounds, acne, psoriasis, lichenoid lesions, and epidermolysis bullosa (EB) can be considered skin conditions.
 - a. As a skilled dermatologist, I hereby attest that, at the time the Ramamurthy patent was filed, there was no known commonality among any of these skin conditions.
 - i. Psoriasis is treated using immunosuppressive drugs.
 - ii. Treatment of wounds involves many factors, including control of invading microorganisms (both bacterial and fungal), drainage, and nutrition of the area (including perfusion and reperfusion).
 - iii. Lichenoid lesions are an immune disorder, typically treated with steroids.
 - iv. EB actually occurs in two forms. There is no treatment for the congenital (inherited) form. The acquired form is caused by autoantibodies to Type VII collagen (hence an autoimmune disease), and is treated using immunosuppressive drugs.
 - v. Acne can be treated with systemic retinoids (for severe cases) and topical benzoyl peroxide (for mild cases).

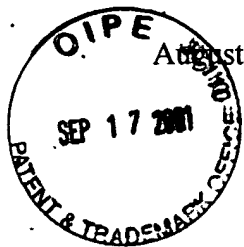
- b. In light of these disparate treatments and causes, a skilled dermatologist, after having read the Ramamurthy disclosure, would have been left with the firm impression that the Ramamurthy showed no knowledge or appreciation for any dermatological condition.
- i. There is no known commonality among the causes of these conditions.
 - ii. None of these dermatological conditions was known to be mediated by dermal matrix metalloproteinases (MMPs). Ramamurthy's conjecture that MMPs are involved is not proven by *in vivo* or *in vitro* evidence of any sort.
 - iii. None of the experiments in Ramamurthy's patent involve any dermatological conditions.
 - iv. Most of the Ramamurthy experiments involve bone loss in rats, which is not predictive of any dermatological condition in human skin.
 - v. Most of the Ramamurthy experiments involve rat models of a human condition. There is presently no known animal model for human acne.
5. The patent to Teronen suffers from the same problems as that to Ramamurthy discussed above. The disclosure at the top of column 4 of Teronen as to the conditions, especially the dermatological conditions, that can be treated is virtually identical with that of Ramamurthy. Further, none of the experiments involves a dermatological condition.
6. In conclusion, the typical dermatologist would view Ramamurthy and Teronen's disclosure with suspicion, because medicine is inherently unpredictable, and

some experimentation (*in vitro* or *in vivo*) is required to explain the basis for a suggested treatment. No dermatologist would consider either of these two disclosures to present even a suggestion to investigate treating those dermatological conditions with their composition, because there is no scientific reasoning or methodical explanation why their compositions would have a beneficial and not any detrimental effect.

7. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


Sewon Kang


dated



August, 2001

CURRICULUM VITAE

Sewon Kang, M.D., M.P.H.

CURRENT POSITION

Associate Professor
Director, Dermatopharmacology Unit
Department of Dermatology
University of Michigan Medical Center

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University of Michigan Medical Center
1910 A. Alfred Taubman Health Care Center
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Home:

3680 Creekside Court
Ann Arbor, Michigan 48105

BORN

Seoul, Korea, August 22, 1958

MARRIED

Yun K. Jang, June 12, 1982

CHILDREN

Christine S. Kang, October 7, 1983
Timothy K. Kang, February 15, 1991

EDUCATION

Graduate:

University of Michigan Medical School
Ann Arbor, Michigan
Degree: M.D., June 1987

University of Michigan School of Public Health
Ann Arbor, Michigan
Health Degree: M.P.H. in Epidemiology, August 1982

Undergraduate:

Williams College
Williamstown, Massachusetts
Degree: B.A. in Chemistry, June 1980

High School:

Glenbrook North High School
Northbrook, Illinois
September 1975 - June 1976

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POSTGRADUATE TRAINING AND EDUCATION

Longwood Chief Resident (Brigham & Women's, Beth Israel, Boston Children's, Dana Farber Hospitals) Department of Dermatology, Harvard Medical School, Boston, Massachusetts	1991
Residency, Department of Dermatology, Harvard Medical School Massachusetts General Hospital, Boston, Massachusetts	1988 - 1992
Research Fellowship, Department of Dermatology, Harvard Medical School Massachusetts General Hospital, Boston, Massachusetts	1989 - 1990
Internship, Department of Internal Medicine, University of Rochester Strong Memorial Hospital, Rochester, New York	1987 - 1988

ACADEMIC APPOINTMENT

Associate Professor, Department of Dermatology University of Michigan Medical School	1998 - present
Assistant Professor, Department of Dermatology University of Michigan Medical School	1992 - 1998

HONORS AND AWARDS

University of Michigan Medical School Clinical Research Award	2001
Alpha Omega Alpha Student Research Fellowship Mentor Stipend	2001
University of Michigan Medical Student Teacher of the Month Award	2001
University of Michigan Venture Investment Fund Award	2000 - 2002
Lotus Award from the University of Michigan United Asian-American Medical Student Association	1999
University of Michigan Medical Student Award for Teaching Excellence	1998
Outstanding Paper (with Dan Loo, M.D.), Michigan Dermatologic Society	1996
Outstanding Paper (with Mary Lien, M.D.), Michigan Dermatologic Society	1995
University of Michigan Faculty Travel Award	1995
Dermatology Foundation Clinical Career Development Award in Vitamin D ₃ and 9-cis Retinoic Acid interaction in normal and psoriatic skin	1994 - 1997
University of Michigan Minority Faculty Development Fund	1993
Beiersdorf Travel Award in Dermatology	1990
M.D. degree with distinction	1987
University of Michigan Medical School Dean's Award for Research	1987
University of Michigan President's Student Recognition Award	1987
Academic All-American	1987
American Dermatological Association Student Research Fellowship	1986
National Psoriasis Foundation Summer Research Fellowship	1984
HANA Scholar	1986 - 1987
Crusade Scholar	1982 - 1986
B.A. degree awarded with cum laude	1980
Haystack Scholar, Williams College	1977 - 1980

GRANTS - As Principal Investigator

National Institute of Health, 1 K24 AR02159-01, "Clinical translational research in dermatology and mentoring clinical investigators" \$615,705 (2000 - 2005)

Non-Federal Support: \$708,877 - \$1,231,863 per year from 1993 to present

Dermatology Foundation Clinical Career Development Award, " Vitamin D₃ and 9-cis retinoic acid interaction in normal and psoriatic skin" [\$40,000/yr] 1994 - 1997

University of Michigan Health System Faculty Group Practice Venture 2000 - 2002
Investment Fund Award [\$252,396]

GRANTS - As Co-Investigator

National Institute of Health, 1R01-AR4396201, " Novel treatments for HIV-1 related psoriasis" \$556,160 (PI: Brian J. Nickoloff; 1995-1998)

National Institute of Health SBIR 1R43-AI30876 " Topical delivery of liposomally-encapsulated interferon" \$362,944, (PI: Norman Weiner; 1994 - 1996)

CONSULTING POSITIONS

St. Joseph Mercy Hospital, Ann Arbor, Michigan 1992 - 1993
Chief, Inpatient Consultation Service, University of Michigan Hospitals 1994 - present

SCIENTIFIC ACTIVITIES

Director, Dermatopharmacology Unit, Department of Dermatology
University of Michigan Medical Center, Ann Arbor, Michigan 1992 - present
Research Fellow, Department of Dermatology, Harvard Medical School
Massachusetts General Hospital, Boston, Massachusetts 1989 - 1990
Student Research Fellow, Department of Dermatology
University of Michigan Medical School, Ann Arbor, Michigan 1983 - 1987
Student Summer Research Fellow, The Salk Institute for Biologic Research
Tumor Virology Laboratory, La Jolla, California 1978 - 1980

TEACHING APPOINTMENTS

American Board of Dermatology

In-training examination contributor 1997

University of Michigan Medical School

Director, Dermatology Clinical Elective	1993 - present
Director, Dermatology Core Curriculum, M II Series	1995 - present
Lecturer, Dermatology Core Curriculum, M II Series	1993 - present

Harvard Medical School

Lecturer for Medical Students in Dermatology Clerkship	1991
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University of Michigan Literature, Science & Art

Teaching Assistant, Organic Chemistry	1981
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Williams College

Teaching Assistant, Department of Biology, Chemistry	1977 - 1980
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PROFESSIONAL EXPERIENCE

Biostatistician, Dermatopharmacology Unit Department of Dermatology, University of Michigan Medical School	1982 - 1983
User-Friendly Computer Software Programmer Office of Employee Health, University of Michigan Medical Center	1984 - 1985

MEMBERSHIPS IN PROFESSIONAL SOCIETY

Harvard House Officer's Club	since 1988
American Federation for Medical Research	since 1989
Society for Investigative Dermatology	since 1992
American Academy of Dermatology	since 1992
Korean Dermatologic Association of America	since 1992
Michigan Dermatological Society	since 1993
Skin Pharmacology Society	since 1993
Inflammation Research Association	since 1993
International Society for Digital Imaging of Skin	since 1993
Dermatology Foundation	since 1994
National Psoriasis Foundation	since 1996
American Society for Clinical Pharmacology and Therapeutics	since 1996
Korean-American University Professors Association	since 1996
Korean Society for Psoriasis Research, Honorary Member	since 1998

NATIONAL AND INTERNATIONAL COMMITTEES AND RESPONSIBILITIES

Elected Member, Committee on Albert M. Kligman Fellowships of The Society for Investigative Dermatology	1997 - 2000
President, Korean Dermatologic Association of America	1999 - present
Vice Chair (Michigan), Leader's Society 2000 Campaign, Dermatology	

Foundation
 Expert Committee Member (Dermatology), United States Pharmacopeia
 (USP) Drug Information

2000 - present

2000

JOURNAL REVIEWER

Archives of Dermatology	since 1989
Journal of the American Academy of Dermatology	since 1992
Journal of Investigative Dermatology	since 1997
British Journal of Dermatology	since 1998
Dermatology (Basel, Switzerland)	since 1998
Skin Pharmacology	since 1998
Journal of Dermatological Treatment	since 1999
Photodermatology, Photoimmunology & Photomedicine	since 2000
Photochemistry and Photobiology	since 2000
The Medical Letter on Drugs and Therapeutics	since 2001

EDITORIAL RESPONSIBILITIES

Member, Editorial Board, Journal of the American Academy of Dermatology	1997 - present
Member, Editorial Board, Clinical Dermatology (Seoul)	1997 - present

GRANT REVIEWER

BC (British Columbia) Health Research Foundation	1992
United States Civilian Research and Development Foundation	1997
The University of Michigan Medical School Biomedical Research Application- Basic Science Research Partnership	1997
National Institute of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (Special Emphasis Panel, Biomarkers for Rheumatic and Skin Diseases)	2001 - present

CERTIFICATION AND LICENSURE

Diplomate, National Board of Medical Examiners	1988
Diplomate, American Board of Dermatology	1992
	Recertified until 2013

ADMINISTRATIVE POSITIONS

University of Michigan Department of Dermatology

Director, Dermatopharmacology Unit	1993 - present
Clinical Research Director, University of Michigan/Johnson & Johnson Research Alliance (1990 - 2005)	1993 - present
Member, Five-Year Departmental Review Committee	1996
Associate Director, Dermatopharmacology Unit	1992 - 1993
Member, Resident Selection Committee	1993 - present
Member, Promotions Committee	2001 - present

University of Michigan Medical School

Member, Committee on Medical Student Research	1984 - 1987; 1997 - present
Faculty Career Advisor	1993 - present
Member, Diversity and Career Development Committee	1997 - 1999
Search Committee for Director of Dermatopathology	1997 - 1998
Member, Academic Review Board	1992 - 1993
Director, The XVII Midwest Student Medical Research Forum	1985 - 1986
Director, Medical Student Research Forum	1984 - 1987
Member, Student Council	1986 - 1987

Harvard Medical School Department of Dermatology

Member, Resident Selection Committee	1991 - 1992
Member, ABC Committee	1988 - 1992

BIBLIOGRAPHY

PUBLICATIONS IN SCIENTIFIC JOURNALS

1. Vanderveen EE, Ellis CN, **Kang S**, Case P, Headington JT, Voorhees JJ, Swanson A: Topical minoxidil for hair growth. *J Am Acad Dermatol* 1984;11:416-421
2. Wong RC, **Kang S**, Heezen JL, Voorhees JJ, Ellis CN: Oral ibuprofen and tetracycline for the treatment of acne vulgaris. *J Am Acad Dermatol* 1984;11:1076-1081
3. Ellis CN, **Kang S**, Grekin RC, LoBuglio AF, Voorhees JJ: Etretinate therapy for psoriasis reduces antibody-dependent cell-mediated cytotoxicity of polymorphonuclear leukocytes. *Arch Dermatol* 1985;121:877-880
4. Ellis CN, **Kang S**, Grekin RC, Voorhees JJ, Silva J: Etretinate therapy reduces PMNL chemotaxis-enhancing properties of psoriatic serum. *J Am Acad Dermatol* 1985;13:437-443

5. **Kang S**, Ellis CN, Grekin RC, Hamilton TA, Voorhees JJ, LoBuglio AF: Etretnate therapy and immune activities. *Arch Dermatol* 1986;122:629-630
6. Ellis CN, Fallon JD, **Kang S**, Vanderveen EE, Voorhees JJ: Topical application of nonsteroidal anti-inflammatory drugs prevents vehicle-induced improvement of psoriasis. *J Am Acad Dermatol* 1986;14:39-43
7. Wong RC, Gilbert M, Woo TY, **Kang S**, Peterson C, Ellis CN: Photosensitivity and isotretinoin therapy. *J Am Acad Dermatol* 1986;14:1095-1096
8. Ellis CN, **Kang S**, Vinik AI, Grekin RC, Cunningham WJ, Voorhees JJ: Glucose and insulin responses are improved in psoriasis patients during therapy with etretinate, a vitamin A derivative. *Arch Dermatol* 1987;123:471-475
9. Berman R, **Kang S**, Imber M, Dover JS: Nevus spilus. *J Am Acad Dermatol* 1989;21:163-164
10. **Kang S**, Dover JS: Successful therapy of pyoderma gangrenosum with intravenous vancomycin and mezlocillin. *Br J Dermatol* 1990;123:389-393
11. **Kang S**, Gonzalez E: Photoallergic contact dermatitis. *J Am Acad Dermatol* 1990;23:546-547
12. Markowitz JA, Cosimi LA, Carey RW, **Kang S**, Padyk C, Sober AJ, Cosimi AB: Prognosis following initial recurrence of cutaneous melanoma. *Arch Surg* 1991;126:703-708
13. **Kang S**, Barnhill RL, Graeme-Cook F, Randolph G, Nadol TB, Sober AJ: Primary malignant melanoma of the external auditory canal: a case report with presentation as an aural polyp. *Am J Otol*, 1992;13:194-196
14. **Kang S** (consultant dermatologist): Case Records of the Massachusetts General Hospital. A 56-year-old man with Waldenstrom's macroglobulinemia and cutaneous and oral vesicles. Case of the Month. *N Engl J Med*, 1992;326:1276-1284
15. **Kang S**, Barnhill RL, Mihm Jr MC, Sober AJ: Multiple primary cutaneous melanomas. *Cancer* 1992;70:1911-1916
16. Kenet RO, **Kang S**, Kenet BJ, Fitzpatrick TB, Sober AJ, Barnhill RL: Clinical diagnosis of pigmented lesions using digital epiluminescence microscopy: grading protocol and atlas. *Arch Dermatol* 1993;129:157-174
17. **Kang S**, Barnhill RL, Mihm Jr MC, Sober AJ: Histologic regression in malignant melanoma: an interobserver concordance study. *J Cutan Pathol* 1993;20:126-129
18. **Kang S**, Fitzpatrick TB: Debilitating verruca vulgaris in a HIV infected patient: dramatic improvement with hyperthermia therapy. *Arch Dermatol* 1994;130:294-296

86. Kafi R, Schumacher W, **Kang S**: Treatment of recurrent aphthous ulcers with topical tacrolimus.
87. Chung JH, Hanft VN, **Kang S**: Aging and photoaging.

Non-Peer Reviewed Publications

88. **Kang S**, Sober AJ: Childhood melanoma. *The Melanoma Letter*, 1991;9:1
89. **Kang S**: Computers in the evaluation of pigmented lesions. *The Skin Cancer Foundation Journal*, 1992;10:35
90. **Kang S**: Calcipotriene: A modern psoriasis medicine with ties to rickets. *J Geriatr Dermatol* 1995; 3SB:28B-32B
91. **Kang S**: Photoaging and tretinoin. *Dermatologic Clinics*, 1998;16:357-364
92. Johnson TM, Sondak VK, Su LD, Headington JT, **Kang S**, Lowe L: Is it a benign spitz nevus or a malignant melanoma? *Primary Care & Cancer*, 2000;20:41-44

CHAPTERS IN BOOKS

1. **Kang S**, Serri F, Sober AJ: Regressing Melanoma and Depigmentation, in Cascienelli N, Santinami M, Veronesi U (editors) Cutaneous Melanoma Biology and Management. Milano, Masson, 1990;159-166
2. **Kang S**, Milton GW, Sober AJ: Childhood Melanoma, in Balch CM, Sober AJ (editors) Cutaneous Melanoma: Clinical Management and Treatment Results Worldwide (2nd. edition). Philadelphia, JB Lippincott Co., 1992;312-318
3. **Kang S**, Sober AJ: Pigmentary Disorders, in Rakel R (editor) Conn's Current Therapy, 1992 Edition. Philadelphia, WB Saunders, 1992;793-796
4. Sober AJ, **Kang S**, Barnhill RL: Discerning Individuals at Elevated Risk for Cutaneous Melanoma, in Rampen FHJ (editor) Clinics in Dermatology, 1992;9:15-20
5. **Kang S**: Seborrheic Dermatitis, in Arndt KA, et al. (editors) Manual of Clinical Problems in Dermatology. Boston, Little, Brown and Company, 1992;77-81
6. **Kang S**: Pyoderma, in Arndt KA, et al. (editors) Manual of Clinical Problems in Dermatology. Boston, Little, Brown and Company, 1992;137-142
7. **Kang S**: Pyoderma Gangrenosum, in Arndt KA, et al. (editors) Manual of Clinical Problems in Dermatology. Boston, Little, Brown and Company, 1992;300-303
8. **Kang S**, Sober AJ: Disturbances in Melanin Pigmentation, in Moschella SL, Hurley H (editors) Dermatology (3rd. edition). Philadelphia, WB Saunders, 1992;2:1442-1474

9. **Kang S**, Lerner EA, Sober AJ, Levine N: Pigmentary Disorders from Exogenous Causes, in Levine N, Maibach HI (editors) Pigmentation and Pigmentary Disorders. Boca Raton, CRC Press, Inc., 1993;417-438
10. **Kang S**, Griffiths CEM, Voorhees JJ: Photoaging: Mechanisms of retinoic acid-induced improvement, in Bernard BA, Shroot B (editors) From Molecular Biology to Therapeutics, Pharmacology and the Skin. Basel, Karger Series, 1993;5:40-45
11. **Kang S**, Voorhees JJ: Topical retinoids, in Freedberg IM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI, Fitzpatrick TB (editors) Fitzpatrick's Dermatology in General Medicine (fifth edition) McGraw-Hill, 1998;2726-2733
12. **Kang S**, Voorhees JJ: Immunopathogenesis of psoriasis, in van de Kerkhof P (editor) Textbook of Psoriasis. Oxford, Blackwell Science, 1999;106-118
13. **Kang S**, Voorhees JJ: Retinoids in psoriasis, in Christophers E, Wolff K (editors) Dermatologic Therapy (a special issue on The Treatment of Psoriasis). Copenhagen, Munksgaard, 1999;11:67-74
14. Chung JH, **Kang S**, Fisher GJ: The molecular mechanisms of retinoid effects in human skin, Clinics in Dermatology. Advances in Dermatology, 1999;15:367-393
15. **Kang S**, Fisher GJ, Voorhees JJ: Pharmacology and molecular mechanisms of retinoid action in skin, in Livrea MA (editor) Vitamin A and Retinoids: An Update of Biological Aspects and Clinical Applications (Molecular and Cell Biology Update). Basel, Birkhauser, 2000;151-159
16. **Kang S**: Interaction of vitamin D and retinoids, in Kragballe K (editor) Vitamin D in Dermatology. New York, Marcel Dekker, 2000;157-167
17. Sachs D, Baur S, **Kang S**: Topical vitamin D, in Wolverton SE (editor) Comprehensive Dermatologic Drug Therapy. Philadelphia, WB Saunders Co, 2001;685-694
18. **Kang S**, Fisher GJ, Voorhees JJ: Photoaging: pathogenesis, prevention and treatment, in Gilchrist BA (editor) Geriatric Dermatology, Clinics in Geriatric Medicine. Philadelphia, WB Saunders Co (in press).

PRESENTATIONS: INTERNATIONAL

1. **Kang S**, Kenet BJ, Kenet RO, Tearney GJ, Fitzpatrick TB, Sober AJ: Computerized digital photography in the pigmented lesions clinic. Clinical Dermatology in the Year 2000, London, May 1990
2. Kenet RO, **Kang S**, Barnhill RL, Kenet BJ, Tearney GJ, Fitzpatrick TB, Sober AJ: Melanoma and melanoma precursors - pigment pattern characterization in vivo using

28. **Kang S:** Skin aging- current concept and treatment (*Invited Plenary Lecture*). The 50th Annual Meeting of the Korean Dermatological Association, Seoul, Korea, October, 1998
29. **Kang S:** Photoaging- effective management based on patho-physiology. Third Annual International Symposium on Aging Skin, San Francisco, California, January, 1999
30. **Kang S:** Immunomodulatory effects of vitamin D analogues in psoriatic skin. Fourth International Calcipotriol Symposium - Vitamin D in Dermatology, Barcelona, Spain, April, 1999
31. **Kang S:** Evidence based management of aged and photoaged skin. Dermatology Update for the Millennium, San Francisco, California, October, 1999
32. **Kang S:** Cutaneous retinoid metabolism and its effect on vitamin D signaling. Athens Dermatology Symposium: Modern Trends in Skin Pharmacology- Molecular and Clinical Aspects, Athens, Greece, June 2000
33. **Kang S:** Evidence-based therapy with retinoids in dermatology. Department of Dermatology, University of Tokyo, Japan, August, 2000
34. **Kang S:** Distinguishing the cutaneous effect and side-effect of topical retinoids. Department of Dermatology, Kobe University, Kobe, Japan, August 2000
35. **Kang S:** Evidence-based therapy with retinoids in dermatology. Keio University, Tokyo, Japan, August 2000
36. **Kang S:** Retinoid signaling in human skin *in vivo* (*Invited Plenary Lecture*). 25th Annual Meeting of the Japanese Society for Investigative Dermatology, Gifu, Japan, September, 2000
37. **Kang S:** Adapalene gel for the treatment of actinic keratoses. Differin Five-Year Anniversary Symposium, Cannes, France, October, 2000
38. **Kang S:** Molecular dissection of retinoid dermatitis. Department of Dermatology, Seoul National University, College of Medicine, Seoul, Korea, October, 2000
39. **Kang S:** Retinoid signaling in human skin- adapalene's mode of action. The 52nd Annual Meeting of the Korean Dermatological Association, Seoul, Korea, October, 2000
40. **Kang S:** Molecular basis for retinoid irritation. Department of Dermatology, Yonsei University, College of Medicine, Seoul, Korea, October, 2000
41. **Kang S:** Retinoids for aging skin. The 5th International Symposium on Aging Skin, Coronado, California, May, 2001
42. **Kang S:** Cytotoxic T lymphocyte associated antigen (CTLA)-4Ig. 2nd Joint Meeting of International Psoriasis Symposium and the European Congress on Psoriasis, San Francisco, June, 2001

PRESENTATIONS: NATIONAL

1. **Kang S**, Campbell JP, Grekin RC, Matsuda-John SS, Ellis CN, LoBuglio AF, Silva J, Voorhees JJ: Etretinate therapy for psoriasis inhibits both serum chemotaxis for and cytolytic activity by neutrophils. National Clinical Dermatology Conference, Chicago, June, 1983
2. **Kang S**, Vinik AI, Voorhees JJ, Ellis CN: Improvement in glucose tolerance and insulin sensitivity during etretinate therapy for psoriasis. American Academy of Dermatology Summer Session, San Diego, June, 1985
3. **Kang S**: Report on Midwest Student Medical Research Forum XVII to the American Medical Association - Education Research Foundation Council, National Student Research Forum, Galveston, April, 1986
4. **Kang S**, Duraiswamy N, Crespo J, Lee W, Cooper KD: Phenotype and antigen presenting cell function of murine dermal cells. National Student Research Forum, Galveston, April, 1987
5. **Kang S**, Barnhill RL, Mihm Jr MC, Sober AJ: Multiple primary melanoma: implications in patient management. American Federation for Clinical Research Joint Subspecialty Meeting, Washington DC, May 1990
6. **Kang S**, Gonzalez E: Retinoids improve granulomatous dermatitis. American Academy of Dermatology, Atlanta, December, 1990
7. Kenet RO, Tearney GJ, Kenet BJ, **Kang S**, Gallo RL, Carter DM, Fitzpatrick TB, Sober AJ: Clinical characterization of psoriatic plaques in vivo using digital microscopy. American Academy of Dermatology, Atlanta, December, 1990
8. Kenet RO, Tearney GJ, **Kang S**, Kenet BJ, Barnhill RL, Salasche SJ, Fewkes JL, Fitzpatrick TB, Sober AJ: In vivo characterization of pigment patterns in dysplastic nevi using digital epiluminescence microscopy. American Academy of Dermatology, Atlanta, December, 1990
9. **Kang S**, Barnhill RL, Mihm Jr MC, Sober AJ: Histologic regression in malignant melanoma: an interobserver concordance study. American Society of Dermatopathology, Atlanta, November, 1990
10. Kenet RO, **Kang S**, Barnhill RL, Kenet BJ, Tearney GJ, Fitzpatrick TB, Sober AJ: Melanoma and melanoma precursors - pigment pattern characterization in vivo using computer-assisted epiluminescence microscopy. American Society of Dermatopathology, Atlanta, November, 1990

50. **Kang S:** Molecular mechanism of tretinoin in photoaging. American Academy of Dermatology, New Orleans, March, 1999
51. **Kang S:** Retinoids: Understanding its mechanism of action. American Academy of Dermatology, New Orleans, March, 1999
52. **Kang S:** Immunosuppressive drugs for dermatology. American Academy of Dermatology, New Orleans, March, 1999
53. **Kang S, Fisher GJ, Duell EA, Wan YS, Varani J, Voorhees JJ:** The antioxidant N-acetyl cysteine increases the content of the endogenous antioxidant glutathione and prevents UV-induction of matrix metalloproteinases in human skin in vivo. Society for Investigative Dermatology, Chicago, May, 1999
54. **Kang S:** Psoriasis- An immunologic disease. Annual Meeting of the Massachusetts Academy of Dermatology, North Falmouth, October, 1999
55. **Kang S:** Therapeutic update in atopic dermatitis. Annual Meeting of the Massachusetts Academy of Dermatology, North Falmouth, October, 1999
56. **Kang S:** Understanding the side-effect of topical retinoids. American Academy of Dermatology, San Francisco, March, 2000
57. **Kang S:** Understanding the cutaneous side effects of topical tretinoin. Symposium on Photoaging and Intrinsic Aging of the Skin, Academy 2000, Nashville, August, 2000
58. **Kang S:** What are barriers to conducting clinical research in dermatology. Annual Meeting of Professors of Dermatology, Inc., Chicago, September, 2000
59. **Kang S:** Ultraviolet A1 phototherapy for scleroderma. National Institute of Health, National Cancer Institute, Dermatology Branch, Bethesda, February, 2001
60. **Kang S:** Photoaging pathophysiology, treatment and prevention. Department of Dermatology, University of Pittsburgh, Pittsburgh, February, 2001
61. **Kang S:** The role of metalloproteinases in acne. A Symposium on Advances in Acne Research, Society for Investigative Dermatology, Washington, DC, May, 2001
62. **Kang S, Fisher GJ, Voorhees JJ:** Antioxidants for photoaging prevention. Photoprotection Symposium. 29th Annual Meeting of the American Society for Photobiology, Chicago, July, 2001
63. **Kang S:** The physiologic and pharmacologic action of retinoid receptors. Visiting Professor Program, Center for Drug Evaluation and Research, U.S. Food and Drug Administration, Rockville, MD, July 19, 2001